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Tetanus in an Elephant (*Elephas maximus*).

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An Indian elephant was received at the New York Zoological Park on October 8, 1940, at the approximate age of eight years. It weighed 2,100 pounds. On May 2, 1941, the elephant's keeper noticed that the animal was unable to open its mouth. Two and one-half hours later, examination revealed the following: jaws tightly closed; temperature, 98.6°; hypersensitiveness to sound; prolapsing of the nictitating membranes; and erection of the tail (poker tail) when the animal was touched or excited. A diagnosis of tetanus was made. There were numerous small cracks on the feet around the toenails and healing superficial wounds in the skin at the base of the ears. None of these wounds was sensitive to palpation or was the type of wound usually associated with tetanus infection.

After examination, 100,000 units of tetanus antitoxin were given subcutaneously: 50,000 on each side of the neck.

The next day, the animal seemed less sensitive to noise and palpation and was able to open its mouth just enough to admit a one-inch stomach tube. It drank water when the tube was placed in the mouth and water allowed to run slowly. The animal attempted to eat but the mouth could not be opened sufficiently to admit food. It was felt that improvement was sufficient and no antitoxin was given on this day. Considerable edema was present in the neck region where the antitoxin had been administered.

The morning of the third day, May 4, the animal was found broadside, in tetanic spasms. Two ounces of chloral hydrate as a 7% solution were given per rectum after manual removal of the fecal material. The spasms were relieved in twenty minutes and deep sleep occurred which persisted for two hours. During this time, 120,000 units of antitoxin were given and the patient again was examined for wounds which might account for the infection. This examination was not revealing. As the sleep wore off mild

spasms recurred and an additional 4 ounces of chloral hydrate were given per rectum. During the night the chloral hydrate anesthesia wore off but no spasms followed.

On May 5, the animal was unable to rise. Slings and a hoist were used to raise the patient to its feet; the mouth could be opened about one-third its normal opening. Sixty thousand units of antitoxin were given subcutaneously in the region of the flank and three loaves of bread made into small balls were placed in the mouth. These were swallowed with difficulty, followed by water from the hose held in the mouth. Stiffness of the legs was quite apparent, but the animal was capable of moving about slowly and was permitted outdoors all day. Constant unsuccessful attempts were made to eat grass and hay. In the afternoon a bran mash consisting of six quarts of bran in a bucket of water was given through a stomach tube held in the mouth. This was followed by three loaves of bread given in small balls.

On May 6, the condition of the animal was unchanged. She was kept quiet and fed in the manner previously described plus three dozen bananas and two pounds of sugar. This food was given daily and the condition remained the same until May 9 when the stiffness of the legs became more pronounced and marked edema developed in the forelegs from the feet to the shoulders. Eighty thousand units of antitoxin were given. The quantity of bran was doubled to twelve quarts per day in addition to three dozen bananas, two pounds of sugar and three loaves of bread.

From May 9 to May 25, hand feeding was continued as usual and no change in condition occurred. By May 25 the animal had lost considerable weight and was down and unable to rise. She was assisted to her feet by the use of a hoist and was kept in slings and fed through a hose until June 4 when she began to eat hay and had complete use of her jaws.

Throughout the illness urine and fecal material were passed but in diminished quantities.

Several points of interest are apparent in this case:

1. No external wound could be found which might account for the infection.
2. Chloral hydrate is an effective anesthetic for elephants when given in doses smaller than those required for horses of a similar weight.
3. 360,000 units of tetanus antitoxin were used in treating the patient.
4. It must be assumed that the infection was of alimentary origin, which is not improbable because of the habit of elephants of eating large quantities of dirt and refuse from the ground.